Improving Performance among Academic Staff of Nigerian Universities Through Information & Communication Technology (ICT)

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Abstract: The objective of the study was to examine information and communication technology (ICT) improved academic staff performance in Nigeria Universities. The study employed content analysis or qualitative approach to achieve the objective of the study. The study ascertained the degree of ICT adoption by the Nigerian Universities and usage among academic staff. However, the extent literature reviewed, indicated that ICT access and usage, availability have been underutilized by academic staff in the Universities. The study found that ICT usage, access to the facilities was limited because of the environmental factors in the Nigerian Universities. The implication of this finding is that the extent creative output and network of research ideas and knowledge sharing among academic staff of Nigerian Universities are not given adequate priority. Consequently, the study recommended that University Management should procure adequate modern ICT facilities and encourage train and retraining in order to achieve competitive academic learning environment in the Universities.

Key words: Performance, Academic Staff Of Nigerian Universities, Information & Communication Technology.

INTRODUCTION

The evolution of information and communication Technology (ICT) and its uses is increasingly being recognized as a powerful enabler of economic and social development. Information and communication technologies ICT permeate every aspect of our lives; from Community radios in the most rural parts of the globe to cellular phones in the hands of women and men in every community on earth, to computers in almost every medium to large organization. The advancement of ICT has brought new opportunities for both knowledge sharing and knowledge gathering to the extent that the global community can reach connected individuals, families, and work place to better understand their needs and challenges (Tumpe & Maria, 2013). It has greatly influenced the performance of workers. Therefore, performance refers to

eagerness for production. Since early 20th century, this word referred to relationship between efficiency (output) and used factors and instruments for production (input) (Hossein, Fatollah & Tohid, 2014). Performance is a criterion of services and products outputs over workforce input, material input and equipment input. As an industry is more productive, it is more competitive. When performance increases, firms can pay higher wages without increasing inflation. Performance improves life standards and performance improvement means obtaining more output from same inputs (Hossein. Fatollah & Tohid, 2014). It measures efficiently production inputs; such as man, machine and material are being used in a system to perform a given level of output.

In attempt to improve performance of Academic Staff in Nigerian Universities, management in various Institutions adopted ICT facilities. Today most Universities in Nigeria have ICT centre to aid academic performance and increase visibility. The ICT centres have continued to provide the required service for both student and academic staff. The objective of establishing the ICT centre was to enhance the local and global competitiveness of the University, to help adopt required ICT facilities for teaching, learning and research, impacting critical knowledge, training and retraining of staff to have access, usage and acquire need skills for best practices and global benchmarks for optimal relevance and performance in the fast globalizing world (Leonard & Collins, 2014; Ekesionye & Okolo, 2011). In line with the thought universities deployed the facilities to improve performance of academic staff of the University in areas of research, teaching and learning both student and academic staff. Creating Universities website, database, e-registration/e-payment, download and printing of students result has been carried out online and such effort has witnessed slow progress.

On the contrary, adoption of ICT facilities is posed with the challenge of administrative challenge, digital divide, web skill, power fluctuation, poor funding, obsolete and inadequate infrastructure like relevant hardware and software. The observed challenges have given room for inadequate service provision, low ICT knowledge and skills, Inadequate availability of ICT facilities and underutilization among Academic Staff. Since procurement and maintenance of ICT facilities is capital intensive. The situation necessitated Universities to depend on external assistance like TETFUND and NEEDs assessment to meet up with innovation required for improved performance among academic staff in the system. It is interesting to argue that there is appreciable role of ICT facilities in integrating and creating pool of educational media, sound, visual, textual, statistical analysis, and network of research ideas for effective teaching and learning can reduced work related stress and improved performance of academic staff (Onwuagboke & Singh (2016).

Empirical studies conducted by Ugomma, Ochai, &Obasi, (2014); Ubulom, Enyekit, Onuekwa, Amaehule, (2011); and Ilo, Ani & Chioke, (2014) revealed that ICT have the capacity to facilitate teaching and learning in the Universities. Academic staff of Nigerian Universities, cannot avoid ICT facilities and still remain relevant in the world of improved performance (Abedalaziz, Jamaluddin & Leng, 2013; Onwuagboke, Singh, & Onwuagboke, 2014). It is assumed that Universities in developing nation adopted ICT facilities to improve course material, delivering content and sharing content, communication between learners, staff and the outside world, creation and delivery of presentations and lectures, academic research, administrative support, student enrolment (Leonard & Collins 2014; Okolocha & Nwadiani, 2015). To this end ICT facilities has the potential to improve performance of academic staff in Nigerian Universities, notably in areas of both effective knowledge delivery to student and collaboration among the staff and network of research ideas or output effectively (Fatima & Abdulsalam, 2012).The technologies has created a greater opportunity to accommodate various learning, teaching research and consultancy services and improve performance in the Universities (Ugomma, Ochai, & Obasi, 2014;Onwuagboke, Singh, 2016). The constraints however are how to harness these ICT facilities for teaching learning and research needed funding to procure hardware, software, improve availability, accessibility and usage.

Information and communication technology ICT access has the potentials to improve academic staff performance in Nigerian Universities (Bamigboye, Bankole, Ajiboye, & George, 2013 and Modebelu, & Azu, 2014). Today's world, greater number of academic staff in the University has the possibility of changing the way responsibility are been handled and can increase creative output. And so sharing of knowledge; the relationship between supervisor and supervisee, downloading and printing of students results from Universities portal have reduce time wasting in manual method (Evarest & Laura 2011; Umeh, & Okonkwo, 2014 and Egomo, Enyi, & Tah, 2012). Presently the manners in which people learn, communicate, and do business has been influenced by ICT facilities. It is cost effective way of bring people with common interest together and many academic staff simply use the ICT partly due to the cost element, inadequate availability, inadequate access and under usage (Yusuf, Afolabi, Loto & 2013 and Elsadaani, 2012). Networking of ideas through the use of ICT facilities allows you to save money, share documents, information and relevant resources, share ideas, collaborate with many people, build and strengthen your community of interest (Fatima & Abdulsalam, 2012; Tonubari, Josephine & Chioma, 2012). Many renowned professors and senior academic staff members resort to computer clouding simply because in their school days as students ICT skills in terms of teaching, learning and research had not been in practice in the less developed nation. Consequently, the find it difficult to settle down to visit ICT facilities and acquire the appropriate ICT usage skills as well use same in inculcating the appropriate knowledge to the students they teach (Papaioannou, & Charalambous, 2011). To reasonable extent ICT access suffer limited appreciation of the values of ICT facilities by the academic staff.

It is the assumption of the researchers like Ziden, Ismail, Spian, & Kumutha (2011) that the availability of ICT facilities and usage may improve academic staff performance in the Universities. This is because, it has changed the way the academic staff carryout their duties and to a great extent employed software packages designed to allow the user the chance to editing, presenting, and sharing of document (Olufemi, Olukayode & Oladele, 2013; & Fatima, Abdulsalam, 2012). Research conducted by Fatima & Abdulsalam, (2012) has shown that some packages like Microsoft office is the most complete personal and business performance solution that enables academic staff to manage research output and create impressive marketing materials, manage e-mail and share information efficiently and surely, and streamline business processes all with familiar, integrated and easy to use software. The use of Power point presentation that enables both academic staff and student to create, present and share powerful presentations. Excel contains powerful tools to help analyze, manage, and share critical research data (Fatima, Abdulsalam, 2012). The observed application packages may help academic staff in higher institutions in Nigerian Universities to develop course material, present lectures, create document and managing of student records today is done using database such as access. The usage, availability and accessibility to a great extent has been challenge because most of the ICT facilities is obsolete when compared with what is needed in ICT adoption in this 21st century; the technology is moderated based on time and space.

Information and communication technology (ICT) facilities has force to improved academic staff performance in the Universities, evidently using the e-portal, networking and computerization of all the offices in the system, registration of student often take weeks which is always characterized with long queues in the registration places and untold hardship in the part of the staff, but with the e-portal student are able to pay and register, print results themselves at their comfort, where ever internet access is available (Nchimunya & Kaoma (2016; Modebelu). ICT facilities have also be seen to improve performance of academic staff in processing student results and transcript. The issues of missing result, miss matched names and grades were eliminated by automation of the records. With identification code assigned to each student and staff, computer process information accurately (Emmanuel & Adebayo, 2011; Jawad, Asif & Hassan, 2014; Nchimunya & Kaoma 2016). This has led to the development of database to keep file electronically like transcript and relevant academic records that takes days to weeks to be processed in the institutions, now may be prepared in matter of minutes because student data is

already intact in the database and easily be called up and a hardcopy is produced. And to reasonable extent makes it easier for the academic staff to manage the database and ensure the consistency of its data.

Access to ICT facilities is crucial for economic, political and social development, thereby bringing government closer to the people (Jawad, Asif & Hassan, 2014). Both professionals and practitioners alike believe that majority of the Universities in Nigeria do not have adequate ICT facilities (Okolocha, Nwadiani, 2015). The paucity of ICT facilities may be attributed to some environmental factors and technical knowledge. The objectives of Universities are research, teaching, learning and community development and therefore cannot afford to neglect ICT and remain relevant in the face of a fast globalizing world. Okolocha, Nwadiani, (2015) believed that Western Universities, had before now appreciated the importance of ICT in enhancing the achievement of the set goals of the Universities. However, as majority of the Universities in Nigeria are insufficiently equipped with ICT facilities, students and staff largely depend on private providers of Internet services (ISPS) in order to access or publish their research outputs. It therefore, becomes doubtful the extent the Universities in Nigeria are able to queue into networking of their ideas and research outputs to a reasonable extent the University may be more competitive among the citadel of learning.

In a technology driven society, getting information quickly is important for both academic staff and student. ICT have made it possible to quickly find and distribute information. Furthermore, efforts to develop communication facilities and these efforts are designed to enable university, to find faster ways to achieving dynamic academic environment. The funding and power constraint has remained a significant challenge to adoption and usage of ICT facilities in in the University (Jawad, Asif & Hassan, 2014). The position of utilization of ICT facilities becomes imperative to academic staff because of assumed benefits to improve performance in the system. It is the assumption that infrastructure, availability and usage is the problem of ICT facilities in Nigerian Universities, especially with the power fluctuation even compounded by inadequate access to technology (Sam, 2011). It is believed that funding and commitment to develop an appreciable ICT application seem very poor and below expectations in the Universities.

Statement of the Problem

The Universities in Nigeria are characterized by insufficient presence of ICT facilities inspite of its useful need. There is general paucity of ICT provision caused by underfunding in Nigerian Universities. A situation that has made even ICT Directorate, not to have state-of-the art ICT facilities for the training and retraining of academic staff let alone rendering community and consultancy services for industries.

Again, underutilization of ICT facilities by the majority of academic staff in Nigerian Universities who rely heavily on manual and traditional practices of searching bibliographies, abstracts and other published works (Okolocha, Nwadiani, 2015). With this approach the appreciation of ICT and its usage and access is played down. ICT access is not given the priority that it deserves thereby making ICT access and usage difficult; access in its usage is thereby jeopardized. Consequently, the paucity of technical skills is one of the greatest challenges facing the Nigerian Universities. Perhaps, Nigerian Universities are not highly ranked in the world universities ranking because most revered Professors and senior academic members seem not to access ICT facilities as a result their results or creative output are not properly documented and disseminated. Not only that they are not utilizing the ICT applications and the university's ICT centres have not found it necessary to constantly upgrade their portal thereby providing obscure information to their users (Sam, 2011).

The few Universities that have ICT facilities do not have sufficient modern telecommunication facilities that enable both the staff and students to access their e-mail, social networks, search engines at will or when necessary. This affects the extent the University communities do network within her environment

and other Universities around the globe; as well reduces the extent of publications, research, teaching and learning as ICT aided learning is seriously played down. Therefore, it is on this premise that the researcher sought to establish how performance could be improve through the use of ICT in Nigeria Universities among academic staff.

Aims and Objectives of the Study

The general objective of this study is to ascertain the extent Information and Communication Technology may improve academic staff performance in Nigeria Universities. However, the specific objectives are to:

1. Determine the extent access to ICT facilities has improved academic staff performance in Nigeria Universities.

2. Ascertain the extent to which availability of ICT facilities has improved academic staff performance in Nigeria Universities

3. To Find out the extent to which ICT facilities usage has improved academic staff performance in Nigeria Universities

CONCEPTUAL REVIEW

The conceptual review of the literature put the various related concepts in perspectives. The review shed light on the variables of the study to ascertain the extent it has improved academic staff performance in Nigeria Universities. Information and Communication Technology (ICT) can broadly be defined as the tools, facilities, processes, and equipment that provide the required environment with the physical infrastructure and the services for the generation, transmission, processing, storing and disseminating of information in all forms including voice, text, data, graphics and video (Yusuf, Afolabi, Loto, 2013). Corroborating Jawad, Asif & Hassan, (2014) defined ICT a system that can aid speedy production, storage, retrieval, communicating, downloading of expensive educational materials scattered all over the world in the internet. Also, the use of Microsoft word for processing documents and telecommunications systems like telephones, email, internet and world wide web, GSM can make students and lecturers to be more active and productive in the classroom.

Access in communication process according to McQuail (2005) refers to the possibility either for a sender to reach a chosen audience or for an audience to receive certain messages or channel…it mainly relates to the degree of openness of media channels to a wide range of voices, especially those with little power or limited resources. ICT access therefore, is a means by which users are connected to the resources. The following are the common ICT facilities access points in University environment; cybercafé, the University's Information Technology (ICT) centers, WLAN (Wireless Local Area Network), personal computer (modem), and office place and more recently, mobile phones. Echezona and Ugwanyi (2010) identified the following types of ICT facilities available in the universities. However, these access and connectivity are generally poor, unreliable, scarce and expensive. In a study of ICT facilities access and usage by the students at the University, it was found that inadequate computers that are connected to the Internet denied the lecturers access to facilities.

Echezona and Ugwanyi (2010) argued that availability is a situation the permit an organization to have right mix of the needed ICT facilities in an organization. While usage means adopting both hardware and software in carrying out your daily task. These include: lack of adequate and appropriate infrastructure, high cost of acquiring and maintaining e-learning facilities, and services, poor telecommunication or network services, erratic electricity supply and inadequate training. Others are inappropriate skills to use e-learning resources or facilities effectively, high cost of owning a internet ready computer, poor orientation towards the use of ICT in education, non-availability of up-to-date content. Today, the Nigerian educational system is witnessing critical shortage of appropriate teaching materials and ineffective system for digital learning resources creation, storage and maintenance

It is the assumption of researchers like Jawad, Asif & Hassan, (2014) that ICT access has the power to improve academic staff performance in Nigeria Universities and reduce cost of service delivery. Thus the traditional ways of conducting the academic business is influenced using ICT facilities and present the cost of conducting research mostly now is reduced and increased significantly the extent research ideas may be networked around the globe. The study attempted to close the gap of inappropriate deployment of technology to improve performance of academic staff of Nigeria Universities when the needed facilities are available and not in use the problem of ICT adoption has not been solved. Ubulom, Enyekit, Onuekwa & Amaehule, (2011) posits that the ICT knowledge and skills needed for the effective utilization is serious lacking among the academic staff for teaching, research and learning. According to the researchers the far reaching implication will continue to be gap in knowledge and knowledge sharing around the globe. Similarly, Tonubari, Josephine & Chioma (2012) established that the level of computer literacy amongst trainee teachers is more adept at skills and literacy in ICT applications. Therefore, it is worrisome that greater numbers of academic staff lack the needed knowledge and skills that were there is availability utilization is not prioritized among academic staff. It is has been the centre of debate that TETFUND and Needs Assessment as the major sponsor of the public Universities in Nigeria that irrespective of procurement the trainee/trainers programmes to boost knowledge/skills and utilization is jeopardized and such improving academic staff performance may be seen at increase decrease level. Evaluating the situation as it is one may believe that adoption of ICT is played down among the academic staff of most Nigeria Universities. For any University to be ranked among the best citadel of learning ICT is a major determinant that will assure ranking of the University and such improving performance of academic staff adequate competency/skills and modern ICT facilities is highly needed.

Thus, academic staff indicated that ICT facilities definitely has been seen improving performance because in areas it is available upgrading of knowledge, research and publication is needed to over processes like connectivity, compatibility, confidence, content and continuity. In a situation where there is inadequate ICT facilities the extent of application among the academic staff may be in doubt.

Contextual Review

The contextual review was organized into categories that include ICT access, availability and ICT usage among academic staff in the University. Rearchers like Leonard & Collins (2014) has it that ICT has the propensity to improve academic staff performance in Nigeria Universities. Previously ICT access is not invoke in developing nation and most academic staff work during the period was done in a traditionally manner unlike now that most of the academic staff related work is conducted based on ICT access, ICT availability and ICT utilization. It is established that ICT has irresistible force according to Ilo, Ani & Chioke, (2014). Technological developments, particularly in the area of ICT facilities significantly may improve staff responsibility and its prompt, reliable and detailed information management.

Issues and gaps that was observed from the study shows that Nigeria Universities academic staff seem to be limited in ICT access, availability and usage, this is attributable to poor ICT facilities, available and ICT usage which indicate that the extent they can network research output around the globe even the method of conducting their work is jeopardized (Fatima & Abdusalam, 2012 and Jawad, Asif & Hassan, 2014). It has been observed that very little research is reported about the adoption of ICT facilities to improve performance of academic staff in Nigeria Universities (Fatima & Abdusalam, 2012). Most of literature reviewed only very few researched on using ICT facilities to improve academic performance in the University (Anyanwu & Nwosu, 2016; Jairus, Daniel & Franklin 2014).

It is on this note that the present research attempted to close the observed gap in the literature in areas of underutilization of ICT facilities which has negative effect on teaching, research and learning. The study presents a pragmatic case on how to identify and measure the performance impacts of ICT facilities in the context of accessibility, usage and availability among Nigeria Universities Academic Staff. This may

serve as a benchmark for the Universities ICT Directorates to plan and carry out resounding initiative to improve the lots of academic staff in the system (Okolocha & Nwadiani, 2015; Nchimunya & Kaoma, 2016). Therefore, the outcome indicated that when the observed issues are not addressed adequately, improving academic staff performance may continue to be a nightmare and the extent research ideas and knowledge sharing will be limited.

Okolocha, Nwadiani, (2015) asserted that most tertiary institutions academic staff in Nigerian Universities lack adequate pedagogical knowledge for effective utilization of ICT facilities for teaching, research and learning. It is often seen that academic staff patronize roadside computer centres to acquire ICT skills or patronizing private internet service provider which they might have supposed to have mastered in school days. There seem to be a gap in the practical skills especially as regards to the ICT facilities utilization, competencies in the present course content delivery among academic staff in Nigerian Universities.

From the studies conducted by Okolocha, Nwadiani, (2015) it was revealed that ICT application among academic staff in Nigerian universities fall below expectation. Ilo, Ani & Chioke, (2014) discovered that to the non-availability of some ICT facilities in schools endanger educators utilization of ICT facilities in learning and research. It was the complain of the NUC, that employers of labour and relevant stakeholders that graduate especially those recruited in various field of endavour could not manipulate basic ICT facilities which are the fundamental tools of operations in those chosen areas. Hence may not be unconnected with the observation that ICT facilities are not available and utilized in teaching and learning in the University. Students and academic staff have also expressed their dissatisfaction with the use of obsolete equipment, machines like manual typewriters, and other outdated facilities in teaching and learning when work environment has gone automated. Despite the seeming benefits with the ICT facilities many academic staff seem to lack the information and communication technology literacy skills such as locating, evaluating, and the use of the overabundance of information available today.

Both State and Federal government contended that ICT knowledge would be a requirement for some employments, interviews, and in some cases promotions. Given the constant flux in global, economy and ICT facilities, it is not certain whether the present state of academic staff cannot be over emphasized. From the background information provided above, the need for accessibility and utilization of ICT facilities by the academic staff may be prioritized. The place of the external sponsors like TEFUND and NEEDs Assessment of Federal Government, Nigeria may cease to assist the University on procurement of needed ICT facilities.

Economically, it is cost and time saving that academic staff do not need to travel to any location thus saving indirect costs. The relationship between supervisor and supervisee is made easy by sending e-mails or with the help of other ICT facilities. Most establishments using online training can save an average of 50% on time and 40-60% on costs when compared with face to face learning. Olufemi, Olukayode & Oladele, (2013) corroborates the study that ICT has a capacity to solve the scarcity of teaching and research materials in the libraries of institutions of higher learning. It may allow students, lecturers and researchers to share their own research outputs with the global community and improve the provision of current e-books, e-journals and other library resources, enhance access of academic libraries to universal library and information resources; give room for scholarship, grants and life-long learning through the provision of virtual archival collections. ICT improves performance of academic staff through its dynamic interactive and engaging content and provides real opportunities for individualization of instruction. Similarly, Yusuf, Afolabi, Loto (2013) believes that ICT facilities has the potentials to accelerate, enrich and deepen skills, motivate and engage students learning, helps to relate school experience to work practice, helps to create economic viability for tomorrow's workers; contributes to the total development of the institution; strengthens teaching and learning and provides opportunities for connection between the school and the world.

THEORETICAL FRAMEWORK

The present study is based on Everett Roger's (2003) theories of Innovation and Diffusion. The major interest of the theory is to elucidate Information and Communication Technology adoption process and factors that promote or hinder its adoption. Rogers in his doctoral dissertation in (1957) was concerned on the usage of patterns of new weed spray among Iowa farmers in the United States of America. From his study he developed the concept of innovation which he defined as any object, idea, technology or practice that is new which may be tangible or physical object such as a new device or machine or intangible such as a new design, methodology or pedagogical technique. An innovation may also be cutting edge communication technology among Silicon Valley business men. The theory simply sees innovation as been conceptualized by time, place and space. Indeed, innovation is expressed and adopted based on time, place and space because an innovative idea in a particular geographical location at a particular period may be an obsolete idea in another place given time and space.

Innovation issues, therefore, relate to the transformation of creative ideas into useful application by combining resources in new or unusual ways to provide value to society, for new improved products, services, technologies or methods of doing things. By defining innovation in this way Rogers effectively dissolved the barriers between disciplines and created a leeway for technology adoption studies using multidisciplinary approaches. Rogers innovation and diffusion theory captures the interest of this study because of the way it conceptualizes technology. In his theory he sees technology and innovation as synonymous. 'Indeed technology to him is a design for instrumental action that reduces the uncertainty in the cause-effect relationships involved in achieving a desired outcome'. (p.13). Every technology is composed of two parts-hardware and software. While hardware is 'the tool that embodies these technologies in the form of a material or physical object,' software is 'the information base for the tool' (p.259). Rogers defines diffusion as 'the process by which an innovation is communicated through certain channels over time among the members of a social system, and divides the process of adoption into five steps: Knowledge: The individual is first exposed to an innovation but lacks any information about it. The individual is not yet inspired to acquire more information about the innovation. Persuasion: In this stage, the individual is interested in the innovation and actively seeks information about it. Decision: the individual takes the concept of the innovation and weighs the advantages and disadvantages of using the innovation and decides whether to adopt or reject the innovation. Implementation: The individual employs the innovation to a varying degree depending on the situation. During this stage, the individual determines the usefulness of the innovation and may search for further information about it. Confirmation: The individual finalizes their decision to continue using the innovation and may use the innovation to its fullest potential. Following from Rogers's innovation and diffusion theory, it is observed that ICT adoption has taken place in Nigerian Universities though in an insignificant way.

CONCLUSION AND RECOMMENDATIONS

It is the conclusion of the study that ICT has the potentials that can improve academic staff performance in Nigerian Universities in today's world of knowledge economy. The computer applications provide tools to support the extent knowledge sharing and retrieval. To this end ICT accessibility, usage and availability has the power to propel academic staff performance in the Universities. Inadequate software and hardware, inadequate ICT facilities, if improved, will assist the academic staff to boost performance in the system. By closing the observed gap in the system, advanced or developed nation's Universities adopted ICT facilities to improve its academic staff performance and Nigerian Universities, may also explore the opportunities offered by ICT facilities and reposition academic staff modus operadi in the Universities. From the findings of this study, the following recommendations could help in improving on the adoption of ICT facilities: Universities Management are encouraged to procure adequate modern ICT facilities and encourage train and retraining in order to increase access. Universities Management are encouraged to create adequate awareness and provide. ICT facilities that will go a long way in achieving

globalized network among academic staff in Nigerian Universities. Universities Management are encouraged to procure modern ICT facilities and place high premium on the usage for teaching, learning and research.

REFERENCES

1. Abedalaziz, N., Jamaluddin, S., & Leng, C. H. (2013). Measuring attitudes toward computer and internet usage among postgraduate students in Malaysia. *Turkish Online Journal of Educational Technology-TOJET*, *12*(2), 200-216.

2. Akparobore, D.O., (2011). Availability and Use of Information and Communication Technologies in two University Libraries in Nigeria. Journal of information and communication technology 8 (1): 137-143

3. Anyanwu, G. O., & Nwosu, C. C. (2016) Evaluating the use of information technology facilities for enhancing productivity of academic librarians in tertiary institutions of Imo State, Nigeria. International Journal of Advanced Academic Research | Sciences, Technology & Engineering, 2(10)1-11

4. Badaru A. & Oyegunle, J., (2012) Impact of ICT on Technical Services. www.idapo22.blogspot.com/2012 impact. Retrieved on 11/04/2017.

5. Bamigboye, O. B., Bankole, O. M., Ajiboye, B. A., & George, A. E. (2013). Teachers' attitude and competence towards the use of ICT resources: A case study of University of Agriculture lecturers, Abeokuta, Ogun State, Nigeria. *The Information Manager* *13*(1&2), 10-15.

6. Egomo, J. E., Enyi, B. I., & Tah, M. M. (2012). Availability and utilization of ICT tools for effective instructional delivery in tertiary institutions in Cross River State, Nigeria. *Global Advanced Research Journal of Educational Research and Review, 1*(8), 190-195.

7. Ekesionye, N. E. & Okolo, A. N. (2011). Optimizing e-learning opportunities: An effective a n d necessary tool towards re-branding higher education in Nigerian society. In N. Onyegegbu and U. Eze (Eds). Optimizing e-learning opportunities for effective educational service delivery (pp. 269-279).

8. Elsadaani, M. (2012). Teaching staff' attitude toward ICT: Is gender a factor? *International Women Online Journal of Distance Education, 1*(2), 21-30.

9. Emmanuel, U. S., & Adebayo, A. A. (2011) ICT's, Service Delivery and Operational Performance in Nigerian Banks: a Survey of Empirical Research, *An International Multidisciplinary Journal, Ethiopia,* 5 (4)44-5

10. Evarest, C. M. & Laura, A. P. (2011) Learning electronically in Nigeria Universities: The example of federal University of technology Minna, Nigeria. *Journal of Emerging Trends in Computing and Information and Communication Sciences,* 2(12) 696-700

11. Fatima, U. Z. & Abdusalam Y. G. (2012). The effect of telecommunication on the productivity of staff in higher institution in Nigeria. *Advances in Applied Science Research*, 3(1)142-145

12. Hossein,V., Fatollah, T., &Tohid, A. H. H., (2014) Investigation of Relationship betweenCustomer Relationship Management Dimensions and Organizational Productivity. *Mediterranean Journal of Social Sciences* 5(23) 2701-2708

13. Ilo, J. V.C., Ani W. U., &Chioke, N. S., (2014) Impact of technological Innovation on Delivery of Banking Services in Nigeria. *International Conference on Economics, Education and Humanities (ICEEH'14)* Dec. 10-11 2014 Bali (Indonesia)

International Journal of Academic Research in Business and Social Sciences, 3(12)11-23

14. Jawa, A., Asif, M. Hassan, K. M. (2014) Impact of Technology on Performance of Employees (A Case Study on Allied Bank Ltd, Pakistan).*World Applied Sciences Journal* 29 (2): 271-276

15. Leonard & Collins (2014) Optimizing E-learning in Nigerian Universities for Sustainable Development. .*Journal of Information Engineering and Applications* 4(10)16-21

16. Modebelu, M. N., &Azu, J. O. (2014). Academic staff challenges to effective utilization of information and communication technology (ICT) in teaching/learning of agricultural education. *International Letters of Social and Humanistic Sciences, 13*, 88-96.

17. Nchimunya, C. &Kaoma, L. (2016) Evaluating the Impact of ICTs on HR Service Delivery: A Case of Barclays Bank Zambia. *Journal of Advanced Management Science,* 4 (6) 471- 474.

18. Okolocha, C. C., Nwadiani, C. O., (2015) Assessment of utilization of ICT resources in teaching among tertiary Institution Business Educators in South Nigeria. *Journal of Education and Learning*: 4(1) 1-8

19. Olufemi, V. A. Olukayode, S. A. & Oladele, D. O., (2013)   the   challenges   toward implementation of information and communication technology (ICT) in secondary schools in Ondo State, Nigeria. *ISSR Journals* 2(3)259-264

20. Onwuagboke, B. B. C., Singh, T. K. R., & Onwuagboke, J. N. (2014). Availability, gender and teaching experience: Determinants of ICT utilization in teaching in rural secondary schools in south eastern Nigeria. *The International Journal of Science and Technoledge*, *2*(5), 410- 416.

21. Onwuagboke, B. B., C., Singh, T. K., R., (2016) Faculty attitude and use of ICT in instructional delivery in Tertiary institutions in a developing nation. *International Journal of Research Studies in Educational Technology,* 5(1)77-88

22. Organization of Economic Cooperation and Development (2011) e-learning the partnership challenge 114 Paris

23. Papaioannou, P., & Charalambous, K. (2011). Principals' attitudes toward ict and their perceptions about the factors that facilitate or inhibit ICT integration in primary schools of Cyprus. *Journal of Information Technology Education*, *10*, 333-347.

24. Rogers E. M. (2003) Diffusion and of Innovations (5[th]ed.). New York: Free Press.

25. Sam, N., (2011) E-learning to redefine Nigeria educational Sector NEXT Community 12-31.

26. Tonubari, K, Josephine, N. J. K., & Chioma, E., (2012) A study of computer literacy among trainee teachers in a Nigerian University of Education. *An International Journal Global Voice of Educators*, 1(1)1-7.

27. Tumpe, N & Maria, E.(2013) The Role of Information and Communication Technology in delivering Diplomatic Services for growth and development of Tanzania.

28. Ubulom, W.J. Enyekit, E. O., Onuekwa, F. A. Amaehule, S., (2011) Analysis of information and communication technology (ICT) accessibility and utilization in teaching of business studies in secondary schools in Andoni local government area, Rivers State, Nigeria. *International Association for Teaching and Learning (IATEL)* 86-92

29. Ugomma, E. Ochai, G. O. & Obasi, S. N., (2014) Management of student personnel services in Nigerian Universities through the application of information and communication technology, *Journal of Research & Method in Education* 4(1) 53-59.

30. Umeh, A. E., & Okonkwo, C. O. (2014). An assessment of the use of technological materials by students to study Social Studies in Niger State College of education Minna. *Developing Country Studies, 4*(10)1-6.

31. Yacob, H. (2011). Factors affecting information and communication technologies use by Academic Librarians in South West Nigeria. Library Philosophy and Practice (e-journal)

32. Yusuf, M. A. Afolabi, F. O., Loto, A. B., (2013) Appraising the role of information communication technology (ICT) as a change agent for higher education in Nigeria. *International Journal of Educational Administration and Policy Studies* 5(8)177-183

33. Ziden, A. A., Ismail, I., Spian, R., & Kumutha, K. (2011). The effects of ICT use in teaching and learning on Students' achievement in science subject in a primary school in Malaysia. *Malaysia Journal of Distance Education, 13*(2), 19-32.